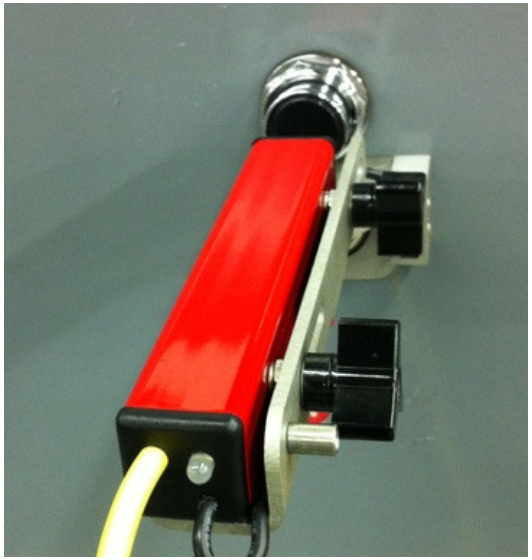
CHICKEN SWITCH®

A Portable Actuator for Remotely Operating Pushbutton Switches



Model PB15

User's Manual

CHICKEN SWITCH®

User's Manual
Model PB15

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1.0 Arc-blast Hazards

The hazards associated with electrical arc-blasts are well documented. Studies conducted by numerous industries and professional organizations have sought to quantify the intensity of arc-blast, the risks to personnel, and various methodologies for mitigating the risks.

Without doubt, increasing the distance between the arc and a human is the single greatest favorable factor in reducing injuries.

The Chicken Switch® is not a panacea but rather one more tool available for protecting workers while they are performing electrical switching.

Using a Chicken Switch® may not negate the need for additional personal protective measures. The user is ultimately responsible for evaluating each situation to determine if additional protective measures are needed.

WARNING

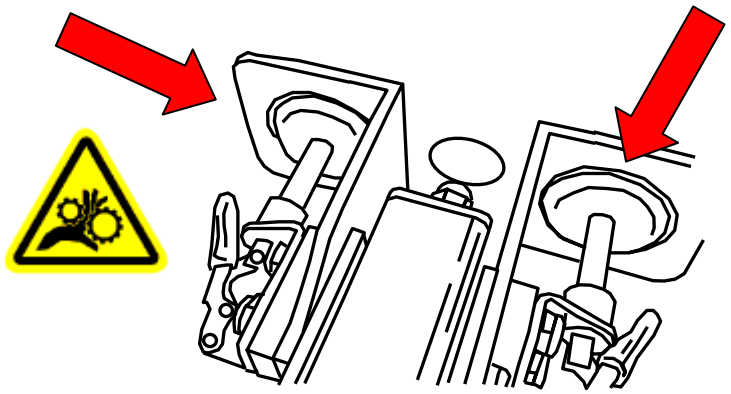
Electrical switching may present risk of serious injury or death. This device should only be used by qualified persons after careful analysis of the hazards.

2.0 Safety Information

ALWAYS connect the control cable to the actuator BEFORE installing the Chicken Switch®.

2.1 Finger pinch points

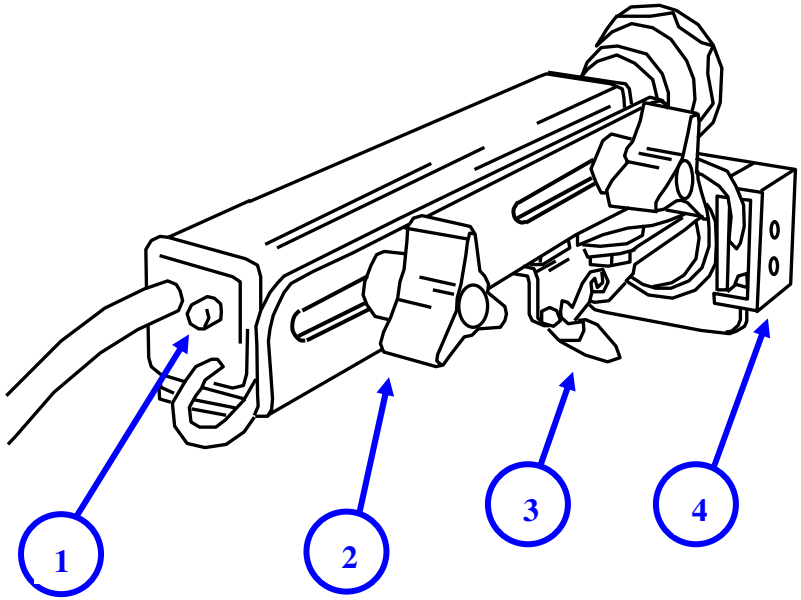
Use caution to keep your fingers clear of the magnets when the PB15 is being installed.



2.2 Strong magnets

The holding magnets are very strong. Keep magnetically-sensitive objects such as watches or computer disks away from the bottom of the actuator.

3.0 Features



(1) Bi-colored LED. Red indicates the actuator plunger is extending. Green indicates the actuator plunger is retracted, or in the process of retracting.

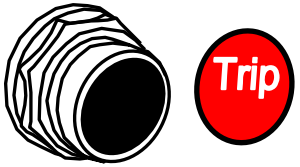
(2) Locking knob, used to position the actuator forward for use on recessed buttons, or back for use on surface-mounted buttons.

(3) Magnet lever, for engaging/disengaging the holding magnet(s).

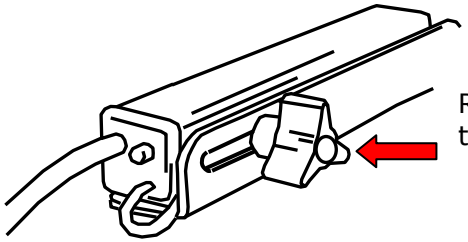
(4) Magnet break-away cutoff switch. If the PB15 is being used in the single-magnet configuration, it is possible that the actuator's force could overcome the holding magnet. If this occurs, the tip switch will signal the microcontroller to turn off the actuator.

3.1 Features (continued)

The PB15 is suitable for use on surface-mounted push buttons… or, recessed buttons.

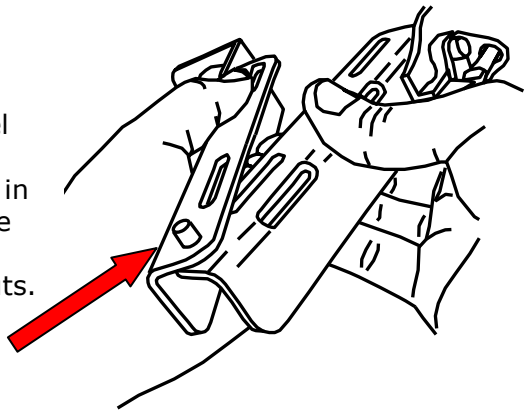


Recessed buttons, or buttons that require a high amount of force, will require two holding magnets. The second magnet is easily attached:



Remove both thumb nuts.

Align the dowel pin, place the actuator studs in their respective slots, replace both thumb nuts.



4.0 Battery Requirements

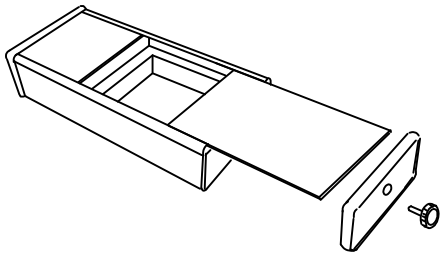
- Eight (8) AA alkaline cells are required – eight cells in each battery holder. Carefully observe polarity when installing cells.
- DO NOT use rechargeable batteries.

4.1 Battery Life

- A set of fresh alkaline cells should give hundreds of operations.

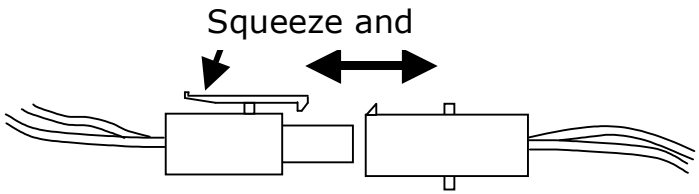
4.2 Battery Replacement

- ALWAYS disconnect the control cable before replacing batteries to avoid possible static damage of the electronics!



- Turn the control station upside down, remove the endplate retaining knob. Remove the endplate and slide the cover out as shown above.

4.3 To connect/disconnect batteries:



4.4 CAUTION: Static Discharge Potential

- To avoid possible damage to electronic components disconnect the control cable before replacing batteries.

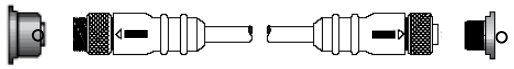
WARNING

To avoid possible damage to electronic components disconnect control cable before replacing batteries.

NOTICE:
The Chicken Switch® is designed as a *portable* device. It is not designed to remain with the control unit connected to the actuator for extended periods of time. To do so will deplete a fresh set of batteries in approximately four to five days.

5.0 Operation

5.1 Connecting the control cable:



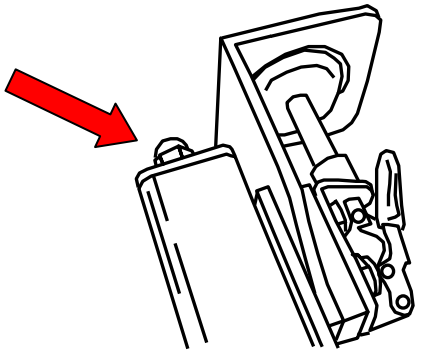
1. Align the arrow on the cable end with the top of the receptacle.
2. Push in and engage the threads on the coupling nut and turn clockwise.
3. After one or two turns of the coupling nut, push in on the cable end. Repeat this until the connector is fully seated.
4. Use a similar technique of turn-stop-and-pull to disengage the cable ends.

ALWAYS connect the control cable to the actuator and hand-held controller BEFORE installing the Chicken Switch®.

5.2 Installing the actuator

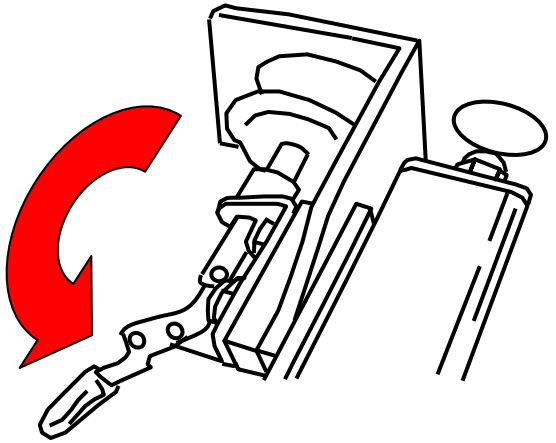
1. BEFORE placing the actuator on the switchgear, verify the plunger is fully retracted, as shown.

Retracted

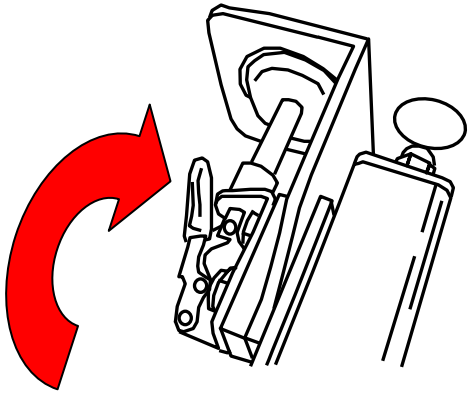


5.2 Installing the actuator (continued)

2. Verify that magnets are retracted by moving the red magnet levers toward the top of the actuator.



3. Carefully align the plunger over the recessed button on the switchgear. Rotate the magnet levers toward the switchgear to cause the magnets to contact the switchgear.



CAUTION: Keep fingers clear of the magnets!

5.3 Activating the actuator

1. The next steps will activate the actuator and cause the pushbutton on the switchgear to be depressed. BE SURE that you are ready for this operation before proceeding.

2. PRESS and HOLD the ENABLE button.

3. PRESS and HOLD the ACTIVATE button until the actuator reaches full stroke. The red LED indicates the actuator plunger is extending.

4. Once the full stroke is reached, RELEASE the ACTIVATE and ENABLE buttons. The actuator plunger will automatically retract.

5. Remove the actuator from the switchgear by carefully releasing the magnets.

Note: The actuator will stop extending when it reaches 12 lbs of force or the stroke reaches 1-7/8". If your button requires more than 12 lbs or more than 1-7/8" of stroke, please contact us for possible solutions.

See Section 5.4 for more information on the hand-held controller layout and the features of each component on the controller.

5.4 The indicator lights & controls:

GREEN LED: indicates the controller is enabled.

YELLOW LED: The YELLOW LED can have four conditions:
OFF – Power switch is turned off
ON Steady – Power is on, Tip Switch is not tripped, battery voltage is good.
SLOW Flashing – Power is on, Tip Switch is tripped, voltage is good.
FAST Flashing – Power is on, Battery voltage is Low – must replace batteries.

RED LED: indicates the actuator's plunger is extending.

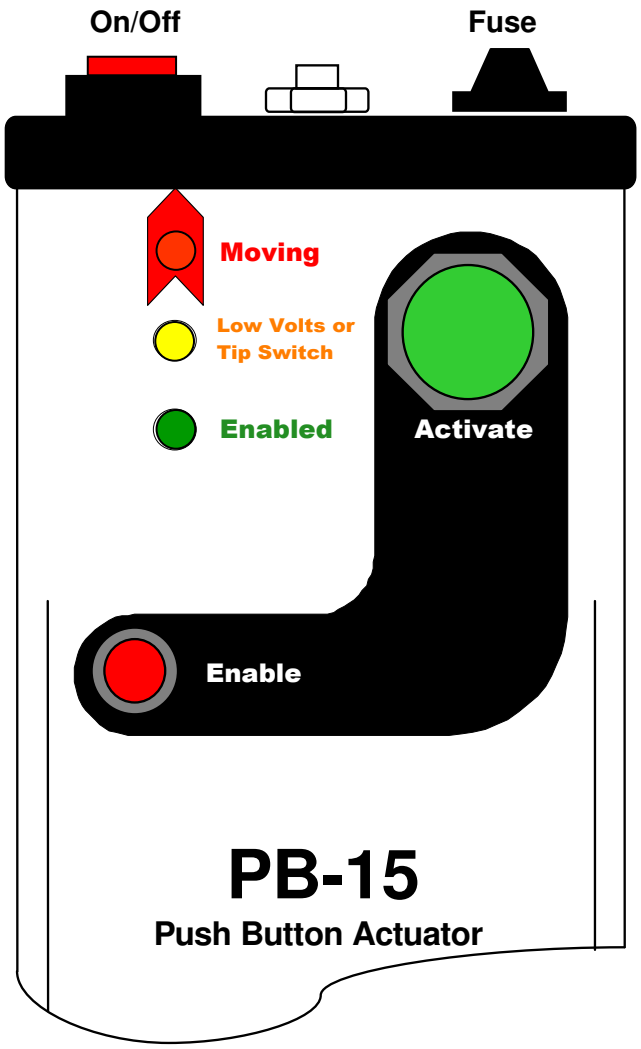
Rapidly Alternating RED and YELLOW indicates the battery voltage has fallen to an unacceptable level. Operation is inhibited until batteries with an acceptable voltage level are installed.

The ENABLE button:

For safety reasons, both, the ENABLE button and ACTIVATE button must be depressed simultaneously in order to operate the actuator.

Note:
Whenever the ACTIVATE button or the Enable button is released, the actuator will drive the plunger to the retracted position. Or, if the magnet break-away cutoff switch is activated, the actuator plunger will retract.

5.4 Continued



6.0 Care and Storage

6.1 Cleaning the magnets

Over a period of time, the magnets may attract ferrous debris. Exercise care to avoid setting the actuator where the magnets might attract debris. If this does occur, use a paper towel or nylon bristle brush to clean the face of the magnets. Keeping the magnet faces clean ensures that maximum holding power is maintained.

6.2 Storage

Remove all batteries from the control station if the device will not be used for longer than 6 months.

Never store the batteries where the ambient temperature might exceed 110º F.

Avoid getting the unit wet or storing it in a high humidity location.

7.0 Troubleshooting Guide

1. The actuator extends but does not seem to be completely pushing my pushbutton.

    - The PB15 is capable of producing approximately 12 lbs of maximum force. Your pushbutton may require more than 12 lbs of force.
    - The PB15 is programmed for 1-7/8" of stroke. Your pushbutton may require more stroke than this.

Contact us if you are having one of these problems. We may be able to modify the PB15 for your application.

2. The PB15 will not stay attached to the cabinet when operating the actuator.

    - If you are having trouble with the actuator staying attached, make sure that both magnets are firmly contacting the metal switchgear face. Be aware that any labels or material that prevent the magnets from contacting the metal directly, will reduce the holding power of the magnets.

3. The PB15 will not operate and the red and yellow LEDs alternate flashes whenever the Enable Button is depressed.

    - This is caused by a 'low voltage lockout'. Replace the batteries.

8.0 Warranty

MarTek Ltd. guarantees all products manufactured by MarTek Ltd. only against defects in materials and/or workmanship for a period of twelve (12) months commencing on the date the product is received by the customer. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

MarTek Ltd. will, at its option and its cost (including shipping expenses for return and re-delivery), repair, replace or refund the purchase price of any product manufactured by MarTek Ltd. which has a defect in materials and/or workmanship. THIS IS CUSTOMER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY. IN NO EVENT WILL MARTEK LTD'S LIABILITY FOR DAMAGES (WHETHER ARISING FROM BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE) EXCEED THE PURCHASE PRICE OF THE PRODUCT CONCERNED NOR WILL MARTEK LTD. BE LIABLE FOR PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS) EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

MarTek Ltd. reserves the right to disallow warranty repairs if the unit has been disassembled or misused, as determined by MarTek Ltd. in good faith. Please contact us at (800)-248-4958 for a return authorization.

MarTek Ltd.
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9.0

Specifications

MECHANICAL

Holding magnets:	Two magnets, each rated @ 55.1 lbs. force, 12,600 Gauss.
Operating force:	Approximately 12 pounds maximum.
Maximum stroke:	1 7/8" measured from retracted position.
Projected life:	15,000 operations

ELECTRICAL

Operating voltage:	12 volts DC
Fuse:	3 amp, quick-blow, AGC-3
Power supply:	8 AA alkaline disposable batteries. When used properly, one set of batteries should yield hundreds of operations.
Control Cable:	30 feet in length (9.1 meters), 5-conductor, extra-flexible, PUR insulation
Controller:	Requires two-hand operation. The 'Enable' button must be depressed while depressing the 'Activate' button. A programmable micro-controller manages control inputs. An intelligent 'H-bridge' motor driver provides start/stop motor functions. The H-bridge has integral thermal shutdown protection.

MarTek Ltd.

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www.chickenswitch.com

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